

WHAT IS CLAIMED IS:

1. A navigation system comprising:

5 a present position detecting device for detecting a present position;

a plurality of memory devices each capable of reading out map data which is recorded therein;

10 a navigation controlling device for controlling a navigation operation in correspondence with the detected present position by using the map data; and

15 a map data reading device for accessing one of the memory devices, which is selected in accordance with a predetermined condition, and reading out the map data required for the navigation operation therefrom.

2. A navigation system according to Claim 1, wherein said map data reading device selects the memory device to be accessed, which is indicated by a priority flag set in advance.

20 3. A navigation system according to Claim 1, wherein said map data reading device selects the memory device to be accessed, which is capable of reading out the map data updated at the latest.

25 4. A navigation system according to Claim 1, wherein said map data reading device selects the memory device to be accessed, in accordance with management information of the map data stored in

the memory devices.

5. A navigation system according to Claim 4, further comprising  
a management information storage device for extracting the  
5 management information from the memory devices and holding the  
extracted management information respectively.

6. A navigation system according to Claim 5, wherein  
said management information storage device holds name  
10 information indicative of a name of the map data, and  
said map data reading device selects the memory device to be  
accessed, in which a presence of the map data is confirmed in  
accordance with the name information.

15 7. A navigation system according to Claim 5, wherein  
said management information storage device holds date and  
time information indicative of date and time when the map data is  
updated, and

20 said map data reading device selects the memory device to be  
accessed, which is capable of reading out the map data  
corresponding to the date and time information indicative of latest  
date and time.

8. A navigation system according to Claim 1, further comprising  
25 a differential management information storage device for extracting  
the management information from the memory devices and holding

differential management information indicative of a difference between the management information extracted from one memory device and that extracted from another memory device, wherein

5 said map data reading device selects the memory device to be accessed in accordance with the differential management information.

9. A navigation system comprising:

10 a present position detecting device for detecting a present position;

a first memory device capable of reading out map data from a record medium in which the map data is recorded;

15 a second memory device of non-volatile type, capable of reading out the map data therefrom and writing the map data thereinto;

a navigation controlling device for controlling a navigation operation in correspondence with the detected present position by using the map data;

20 a map data transferring device for controlling said first memory device to read out the map data from said record medium at a predetermined timing, and then transferring and storing the read out map data to said second memory device; and

25 a map data reading device for selecting one of said first and second memory devices in accordance with a predetermined condition, accessing the selected one of said first and second memory devices and reading out the map data required for the

navigation operation therefrom.

10. A navigation system according to Claim 9, further comprising  
a management information storage device for extracting  
5 management information of the map data in said first memory  
device and management information of the map data in said second  
memory device, and holding the extracted management information  
respectively, wherein

said map data transferring device selects the map data to be  
10 transferred in accordance with the management information, and

said map data reading device selects one of said first and  
second memory devices in accordance with the management  
information.

11. A navigation system according to Claim 10, wherein

said management information storage device holds name  
information indicative of a name of the map data, and

said map data transferring device compares the name  
information of the map data in said first memory device with that in  
20 said second memory device, and selects the map data, which is not  
stored in said second memory device, as the map data to be  
transferred.

12. A navigation system according to Claim 10, wherein

25 said management information storage device holds date and  
time information indicative of date and time when the map data is

updated, and

said map data transferring device compares the date and time information of the map data in said first memory device with that in said second memory device, and selects the map data, whose  
5 date and time in said second memory device is older than that in said first memory device, as the map data to be transferred.

13. A navigation system according to Claim 9, wherein said map data transferring device transfers the map data when said record  
10 medium is set to said first memory device.

14. A navigation system according to Claim 9, wherein said second memory device is capable of writing and reading the map data at an access speed faster than that of said first memory device.  
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15. A navigation system according to Claim 14, wherein said second memory device comprises a hard disc device.

16. A navigation system according to Claim 9, wherein  
20 a plurality of block map data, which are obtained by dividing a whole map for each unit block, are recorded in said record medium,

said map data transferring device transfers the block map data, and

25 said map data reading device reads the block map data.

17. A navigation system comprising:

a present position detecting device for detecting a present position;

a first memory device capable of reading out map data from a  
5 record medium in which the map data is recorded;

a second memory device of non-volatile type, capable of reading out the map data therefrom and writing the map data thereinto;

a navigation controlling device for controlling a navigation  
10 operation in correspondence with the detected present position by using the map data;

a differential management information generating device for comparing management information of the map data in said first memory device with management information of the map data in  
15 said second memory device at a predetermined timing, and generating differential management information indicative of a difference between the compared management informations;

a differential management information storing device for storing the generated differential management information; and

20 a map data reading device for selecting one of said first and second memory devices in accordance with the differential management information, accessing the selected one of said first and second memory devices and reading out the map data required for the navigation operation therefrom.

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